



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D5415-1
Job Sheet 193319



Part No: D5415-1

Job Qty: 1 pcs

Part Name: Med Height Saddle



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 4/10/19

Job Tracking No:

Due Date: 2/19/19

Created By: Shannon Hadley

Type: Stock

Description:

Note: D5415 REV.D IPP REV:A 16.09.16 NEW ISSUE DD VERF:JFS IPP REV:B 18.09.18 AS PER DWG REV.C DD VERF:DP IPP REV:C 19.02.15 NOW OUTSOURCE MACHINE DD VERF:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier	Sign-off
					Setup Hrs	Run Hrs		
100	Purchasing	1 pcs	2/19/19	2/19/19	0.00	0.00	Purchasing - 1	APR 10 2019
							Purchasing - 2	
							Purchasing - 3	
110	Packaging 2-1 - Receive - B4B	1 pcs	2/19/19	2/19/19	0.00	0.00	Packaging 2 - 1 - B4B	APR 10 2019
							Packaging 2 - 2 - B4B	
							Packaging 2 - 3 - B4B	
							Packaging 2 - 5 - B4B	
							Packaging 2 - 4 - B4B	
							Packaging 2 - 6 - B4B	
							Packaging 2 - 7 - B4B	
							Packaging 2 - 8 - B4B	
							Packaging 2 - 9 - B4B	
							Packaging 2 - 10 - B4B	
							Packaging 2 - 11 - B4B	
							Packaging 2 - 12 - B4B	
							Packaging 2 - 13 - B4B	
							Packaging 2 - 14 - B4B	
							Packaging 2 - 15 - B4B	
							Packaging 2 - 16 - B4B	
							Packaging 2 - 17 - B4B	
							Packaging 2 - 18 - B4B	
							Packaging 2 - 19 - B4B	
							Packaging 2 - 20 - B4B	
							Packaging 2 - 21 - B4B	
							Packaging 2 - 22 - B4B	
							Packaging 2 - 23 - B4B	
							Packaging 2 - 24 - B4B	
							Packaging 2 - 25 - B4B	
							Packaging 2 - 26 - B4B	
							Packaging 2 - 27 - B4B	

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com



Container No: S171460



Part: D5415-1

Job No: 193319

Serial No/Batch: S171460

Revision: D

Inspector:

Exp Date:

Instructions: Various STC's

Date: 04/10/19

				Packaging 2 - 28 - B4B			
				Packaging 2 - 29 - B4B			
				Packaging 2 - 30 - B4B			
				Packaging 2 - 31 - B4B			
				Packaging 2 - 32 - B4B			
				Packaging 2 - 33 - B4B			
				Packaging 2 - 34 - B4B			
				Packaging 2 - 35 - B4B			
				Packaging 2 - 36 - B4B			
111	QC 6	1 pcs	2/19/19	0.00 0.00	QC 6 - 9	APR 15 2019	DAS 40 9-89
					QC 6 - 68		
					QC 6 - 61		
150	Packaging 3-1 - Stock - B4B	1 pcs	2/19/19	0.00 0.00	Packaging 3 - 1 - B4B		
					Packaging 3 - 2 - B4B		
					Packaging 3 - 3 - B4B		
					Packaging 3 - 4 - B4B		
					Packaging 3 - 5 - B4B		
					Packaging 3 - 6 - B4B		
					Packaging 3 - 7 - B4B		
					Packaging 3 - 8 - B4B		
					Packaging 3 - 9 - B4B		
					Packaging 3 - 10 - B4B		
					Packaging 3 - 11 - B4B		
					Packaging 3 - 12 - B4B		
					Packaging 3 - 13 - B4B		
					Packaging 3 - 14 - B4B		
					Packaging 3 - 15 - B4B		
					Packaging 3 - 16 - B4B		
					Packaging 3 - 17 - B4B		
					Packaging 3 - 18 - B4B		
					Packaging 3 - 19 - B4B		
					Packaging 3 - 20 - B4B		
					Packaging 3 - 21 - B4B		
					Packaging 3 - 22 - B4B		
					Packaging 3 - 23 - B4B		
					Packaging 3 - 24 - B4B		
					Packaging 3 - 25 - B4B		
					Packaging 3 - 26 - B4B		
					Packaging 3 - 27 - B4B		
					Packaging 3 - 28 - B4B		
					Packaging 3 - 29 - B4B		
					Packaging 3 - 30 - B4B		
					Packaging 3 - 31 - B4B		
					Packaging 3 - 32 - B4B		
					Packaging 3 - 33 - B4B		
					Packaging 3 - 34 - B4B		
					Packaging 3 - 35 - B4B		
					Packaging 3 - 36 - B4B		
160	QC 21 - SA	1 pcs	2/19/19	0.00 0.00	QC 21 - SA - 21		DAS 21 9-89
					QC 21 - SA - 70		APR 15 2019
					QC 21 - SA - 53		

Part Op 100 - Issue P/O: _____ Manufacture D5415-1 as per Dwg D5415 Possible supplier: ETM industries Material
 Descriptions: release note is required.
 110 - (Receive & Inspect for Damage & Mat'l Certs)
 111 - (QC6- All purchased or subcontracted products)
 150 - (Identify as per dwg & Stock Location: _____)
 160 - (QC21- Final Inspection - Work Order Release)

Job BOM				
Part / Item	Component Name	Quantity	Operation	Container
D5415-1P	Mid Height Saddle	1 Ea (1 ea)	100-Purchasing	SI 71457
Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
100-Purchasing	D5415-1P	1	0	0
Part Specifications				
Specifications could not be found.				

Plex 4/10/19 2:31 PM Dart.Hadley.Shannon



Dart Aerospace Ltd.
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Canada

Tel (613) 632-5200
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PRELIMINARY ISSUE

D5415-1
Job Sheet 184727

**POSITIVE
RECALL!**
Part No: D5415-1

Job Qty: 1 ea

Part Name: Med Height Saddle

Part Weight: 0 lbs

Status: New

Job Created: 10/16/18

Job Tracking No:
Due Date: 2/19/19

Created By: Steven Hemmerich

Type: Stock

Description:
Note: D5415 REV.C IPP REV:A 16.09.16 NEW ISSUE DD VERF:JFS IPP REV:B 18.09.18 AS PER DWG REV.C DD VERF:DP

Ship Via:

POSITIVE RECALL
AUTH _____
EFFECTIVE _____
RELEASED _____
DATE _____
Priority: Medium

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Purchasing	1 pcs		2/19/19	0.00	0.00	Purchasing		
110	Packaging	1 pcs		2/19/19	0.00	0.00	Packaging2		
111	QC	1 pcs		2/19/19	0.00	0.00	QC6		
124	HandFinish	1 pcs		2/19/19	0.00	0.00	HandFinish1		
126	QC	1 pcs		2/19/19	0.00	0.00	QC7-5		
130	SprayPaint	1 pcs		2/19/19	0.00	0.08	Spray Paint		
140	QC	1 pcs		2/19/19	0.00	0.00	QC14		
150	Packaging	1 pcs		2/19/19	0.00	0.00	Packaging3-2		
160	QC21-SA	1 Ea		2/19/19	0.00	0.00	QC21		

Part Op 100 - Issue P/O 41362 Manufacture D5415-1 as per Dwg D5415 Possible supplier Alfcasting.INC Material Descriptions: release note is required.

130 - *****MASK HOLES PRIOR TO PRIME AND PAINT AS PER DWG NOTE 8***** 1- PRIME INSIDE AND OUT PER DWG AND DART QSI 005 4.2.1.3.3 PRIMER BATCH: _____ 2- PAINT OUTSIDE WHITE PER DWG AND DART QSI 005 4.2.2.4 PAINT BATCH: _____

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D5415-1P	Mid Height Saddle	1 Ea (1 ea)	100-Purchasing	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Purchasing	D5415-1P	1	0	0

Part Specifications

Specifications could not be found.

Plex 10/16/18 12:27 PM dart.hemmerich.steven



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO041362**

Supplier: ALI001-VC
Alphacasting Inc.
391 Ste Croix
St Laurent
QC
H4N 2L3 Canada
Phone: 514-748-7511 ext 224
Fax: 514-748-0237

PO No: PO041362
PO Date: 10/16/18
Due Date: 1/17/19
Purchase Order 2
Revision:
Revision Date: 10/24/18
Ship-To Contact: Hemmerich, Steven
Phone: 613-632-5200 Ext: 281
shemmerich@dartaero.com

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pymt Terms: Net 30

Freight Terms:

Special Comments: Revised date, price and instructions. Your quote 28773 with clarification email dated Oct 17.2018

Items

Line Item	Job	Part	Supplier Part No	Item No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	184727	D5415-1P			Mid Height Saddle	Firmed	-	1/24/19	1 Ea	0 Ea	1 Ea	\$1,231.83/Ea	\$1,231.83
Line Item Note Prototype- to be manufactured with modified tooling as per our PO 041361 your quote 28771 DO NOT PAINT, MACHINE OR ANNODIZE. FAI included in price.													
												Grand Total:	\$1,231.83

Order Notes

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Procurement Quality Clauses

A005 RIGHT OF ENTRY

A008 FIRST ARTICLE INSPECTION (FAI) BY SELLER, DOCUMENTATION & SAMPLE SENT TO DART AEROSPACE

A012 CHEMICAL AND PHYSICAL TEST REPORTS

A016 PERSONNEL QUALIFICATION

A026 CERTIFICATION OF MATERIAL CONFORMANCE

A041 QUALITY MANAGEMENT SYSTEM (In Process)

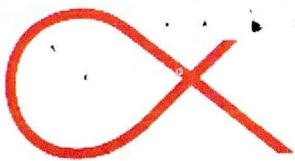
A042 DART NOTIFICATION BY SUPPLIER

A043 RETENTION OF QUALITY DOCUMENT

A048 COUNTERFEIT PARTS AVOIDANCE, DETECTION, MITIGATION AND DISPOSITION PROGRAM

A049 SUPPLIER AWARENESS

Plex 11/26/18 1:56 PM dart.hemmerich.steven



ALPHACASTING inc.

PRECISION INVESTMENT CASTINGS
MOULAGE DE PRÉCISION



Invoice : 51571

Invoice date : March 29, 2019

Page no.: 1

BILL TO:

DART AEROSPACE LIMITED
1270 ABERDEEN STREET
HAWKESBURY
ON K6A 1K7

SHIP TO:

SAME ADDRESS

Customer number: DART -01

Purchasorder number: PO041362

INCOTERM: FCA

Die number: 1909

P.S.T. number:

Salesperson: RAYMOND BONIN

Territory: ONTARIO

Order number: 22456

Terms: NET 45 DAYS

Quantity			Item	Description	Unit price	Extended price
Ord.	Ship.	B.O.				
1	1	0	1	D5415-1P SADDLE	1,231.83	1,231.83

Merci de votre commande / Thank you for your order

T.P.S/G.S.T: R 128901816

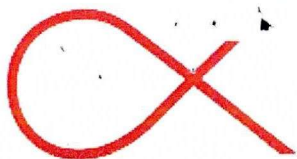
T.V.Q/P.S.T: 1010541952

Sub-total : 1,231.83

GST/HST : 160.14

PST : 0.00

Total: CAN\$ 1,391.97

**ALPHACASTING inc.**PRECISION INVESTMENT CASTINGS
MOULAGE DE PRÉCISION**RELEASE NOTE AND
CERTIFICATE OF COMPLIANCE****Number: 40506****Date: April 09, 2019****Page: 1****SOLD TO:****SHIP TO:****DART AEROSPACE LIMITED
1270 ABERDEEN STREET****DART AEROSPACE LIMITED
1270 ABERDEEN STREET****HAWKESBURY
ON K6A 1K7****HAWKESBURY
ON K6A 1K7**Customer number: DART -01
P.O. number: PO041362
Invoice number: 51571
Part Number: D5415-1P
Drawing number: D5415
Specification: AMS 4289-13-04Description: SUPPORT CASTING
Our die: 1909 Tot. qty: 1
Our order: 22456 Material: F357.0
Rev: C E.C.O.
Draw Rev: C
Heat treat: T4 & T6

Item	Quantity	Melt	Tensile #:	Hardness	Incomming certificate	Xray report
1	1	10/01/2019	19-0242	HRE 88-91	0866050	FN8678

Chemical Composition of Melt

Fe=0.06 Si=7.2 Mn=0.00 Cu=0.00 Al=BAL. Zn=0.01 Mg=0.59 Ti=0.15

**DAS
40
9-89****Non Destructive Test**L.P.I.: Yes Spec: AMS 2175A
M.P.I.: No Spec:
X-Ray: Yes Spec: AMS 2175ACL: 1 GR: B
CL: GR:
CL: 1 GR: BX-Ray: Enclosed: No
On File: Yes

S/N: X29

I HEREBY CERTIFY THAT THE ITEMS OR MATERIAL COVERED BY THIS DOCUMENT HAVE BEEN INSPECTED AND TESTED. THEY CONFORM TO THE APPROVED SPECIFICATION RELATIVE THERE TO AND ARE ACCEPTABLE. THIS IS SUBSTANTIATED EITHER BY MY OWN INSPECTION & TEST, OR BY SATISFACTORY DOCUMENTARY EVIDENCE FROM THE ORIGINAL SOURCE OF SUPPLY.

Alphacasting Inc.VD αQC3
VICTOR DOMINGUEZ

391 Ste Croix, St-Laurent, Qc., Canada H4N 2L3 - TEL.: (514) 748-7511 - FAX (514) 748-0237

FORM.# 19,REV:D,16/08/2002



DAS
40
9-89

ASTM B557 1"GL.(Man.Elong) (RB-KSI)

Specimen ID 19-0242

Test Number 23568

Report Number 12743

Test Date 2/18/2019 1:19:31 PM

Test Results

Diameter (In)	0.248
Area (Sq In)	0.048
Tensile (Ksi)	45.7
Yield (Ksi)	33.3
Total Elong (%)	12.30

Testing Machine SMART Tester

Load Cell S/N (QD5131), Units (-Lbs) 10000

Crosshead Speed (Inches / min) or Rate 0.15

Extension or Position Measured by EZ.2-1 (5147)

Approved By: 

Date: Feb 18, 19

DIE: 1909

MATERIAL: F357.0

H.-T. No: T4 / T6

DATE PULLED: Feb 18, 2019

PART/NO: D5415-1F(D5415-1)

HEAT No: 0866050

TEMP.(10C TO 50C): 24.0°C

ADDITIONAL MELT:

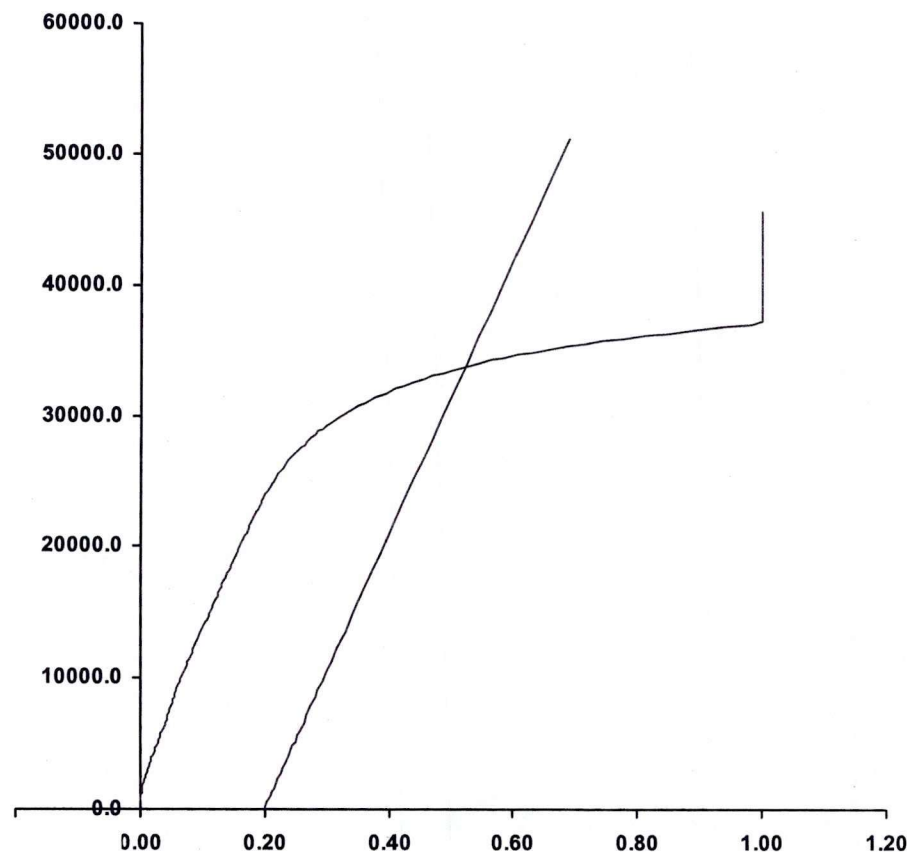
MELT: 10-01-2019

H.TREAT: 16384/16393

SPECIFICATION: AMS 4289-13

UTS/YIELD/EI: 33Ksi/27Ksi/ 3%

Stress (Lbs / Inches ²) vs Extension ()



Template No 200

18-Feb-19

ALPHACASTING.INC



**CERTIFICAT DE CONFORMITÉ
DE RESSUAGE
CERTIFICATE OF COMPLIANCE FOR
FLUORESCENT PENETRANT INSPECTION**

**DAS
40
9-89**

FPI Report #: # de Rapport Ressuage:	19-0218	Die #: # de moule:	1909	Part Number: # de Pièce:	D5415-1P
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Process Specification / Norme du Procédé: ASTM E-1417 & Alpha 3.10.004

Customer Spec. when required / Norme Client, quand requise :

PPS 20.03 ☐ DMC 0010 ☐ Pr 5000 ☐ BAPS 176-002 ☐ ☐

Jet de sable avec AFS 150 et nettoyer avec Turco 4215
Sandblast with AFS 150 and clean with Turco 4215 (Ref. Alpha Inst. 4.10.021)

Identify other if used / Identifié autre si utilisé :

Type I method A sensitivity Level 2

Water washable penetrant ZL60D

Identify other if used :

Identify other if used :

Identifier autre si utilisé :

Identifier autre si utilisé :

Coulée/Melt #	Heat # # de mat. première	Coulée/Melt #	Heat # # de mat. première	Coulée/Melt #	Heat # # de mat. première
10-01-2019	0866050				

F.P.I. Acceptance Specification
Norme d'acceptation Ressuage

F.P.I. Class:
Classe Ressuage:

1

Grade:

B

☒ AMS 2175 rev. A

☐ BAPS 176-002

☐ PPS 35.07

☐ BAERD GEN-009

☐ MIL-STD-1907

☐ IFC 40-931-01E

☐ 00MTF147273

☐

Qty of parts processed:

4

Total lot accepted:

4

Quantité de pièces procédées:

Quantité totale acceptée:

Remarks / Remarques:

Performed By:

Effectué par:

α P
L2-5

Date:

11-02-2019

Highlighted areas represent Alphacasting standard operating practice /
Les zones en gris représentent les pratiques standard d'opération d'Alphacasting

ALL REFERENCED SPECIFICATIONS ARE TO THE LATEST REVISION / TOUTES LES NORMES EN RÉF. SONT À LA DERNIÈRE RÉVISION



RADIOGRAPHIC INSPECTION REPORT & CERTIFICATE OF COMPLIANCE

[illegible]

**DAS
40
9-89**

Melt Date(s): 10-01-2019

Page 1 of 1

Heat No(s): 0866050

Qty Tested: 4

Qty Rejected: 0

Qty Accepted: 4

Inspector:

α X
L2-3

Wade

Date 12/02/2019